The Bilge Pump

The Official Log of the Northwest R/C Ship Modelers

May, 2012

ROBERT OSMOND BIG SPRINGER WINNER

The Spring Springer event was held at the May Fun Float. The weather provided a perfect day with a breeze which made navigating something which had to have a little more attention given to it. The turn out was very satisfactory. Ginny and Dave Feray drove down from Lyndon, Phil Northrup drove in from Wenatchee and many others tore themselves away from chores around the house, which had been put off during the rainy days just past.

The Springer Event was put on by Darlene Wing and Scott Wilson, who had tied at the September event. A challenging problem was presented to the nine skippers who signed up for the competition. A three foot 2X4, with a pointed bow and a seven inch square skeg on the stern was shown to the assembled mass. The challenge was to move the *SS Never Sail* out from shore about fifty feet, circle a moored boat and return in the shortest amount of time. There was a dowel on each side of the beam at the point which would be the best point to push the "boat" from the side.

It was very obvious that being later on the "to go" roster was of benefit. Mistakes of others could be filed away for your turn. Although he was not last, Robert Osmond worked out the best method to complete the course in the shortest amount of time.

DATES OF INTEREST

May

3rd Club Meeting

6th Spring Springer Event - Bellevue

7th Skagit Meeting

12th Tug Boat Races

19th Hilton Lake Float

June

2nd Anacortes Festival

4th Skagit Meeting

7th Club Meeting

16th Regatta - Bellevue

July

2nd Skagit Meeting

5th Club Meeting

8th Fun Float

28th Spokane - Tidewater Cup

In this issue:

Congratulations Robert! Now you get to create the event for September. You might wish to talk to Al Kinsman for some pointers on methods to scuttle the most ships of any Springer challenge. Knowing your creative mind, the members can be assured of a very interesting challenge in September.

Place	Person	Time
1st	Robert Osmond	1 min 36 sec
2nd	Tom Stevens	1 min 41 sec
3rd	Alan Kinsman	2 min 17 sec
4th	Dave Feray	2 min 20 sec
5th	Mel Suelzle	2 min 56 sec
6th	Gordy Canney	3 min 6 sec
7th	Ron Bray	3 min 8 sec
8th	Doug Wilson	4 min 29 sec
9th	Phil Northrop	8 min 53 sec

Thank you's to Allan Wing for being the Harbor Master and keeping the action moving.






Thank you, Darlene for the excellent pictures.

MESSAGE FROM THE BRIDGE

Our “Summer” continues with some more predictable weather, and just in time for our busy schedule. We had a nice day at the Seattle Yacht Club, the May Springer Event definitely provided a new challenge to piloting a Springer. I would have loved to see how Earl Anderson would have done! He knew how to “drive” a Springer.

Next we have the Tug Boat races, on Pier 66 of the waterfront. It is where many of the cruise ships depart. Kevin has definitely said he would be there at 8 AM to set up the pond. Activities begin at Noon, I believe. This is quite an event by all comments made by “old” timers of the club.

The following weekend we have the Hilton Lake outing, put together by Dain Webster. It is a beautiful locale and although the parking is not the most ideal, I think it will be a great afternoon. It is a chance to show off our club to the residents and to have them see the talent we have in our members. Time is Noon to 4 PM.

I continue to hear from a few of our members about the Web site and what is in the Member’s Only section. When I proposed the idea of what this should be I gave some good reasons for what was to be placed in this section and why. I feel many of the individuals who have given me their comments have not thoroughly looked at our Web site. All of our activities are listed on the calendar, notices are placed on the front page and many of the “how to” sections are available to the general public. If you visit other club web sites you will find that most of them require a membership in the club before you are permitted to see much of their material. This is a standard practice. Since our Web site has been so expanded, the newsletter is not the only reason to go to the site and as stated previously, the are other sections which spell out our activities. The members deserve some privileges and the newsletter is emailed to each member by Gordy.

Let’s Have Fun!

May Minutes by Ron Bray

The meeting started promptly at 1900 hours under direction of our president **Lee Stewart**. There were no guests but 19 swabbies were in attendance.

Show and tell was the first order of business, but there were only a few projects presented. **Phil Northrup** brought in some buoys which were initially constructed some 10 – 15 years ago and which are undergoing renovations to accommodate conditions at the Bellevue pond. **Tom Stevens** also brought in several of these same era buoys. He also distributed shrink tubing to those who desired some. **Robert Osmond** brought in an aluminum speed boat with a functioning antique outboard engine, both of which are probably collectibles. He also brought in a Springer for display.

Dain Webster announced that all are invited for a site evaluation at Hilton Lake this Saturday at noon as there is a fun float planned for May 19th from 12 – 4 PM. An e-mail will be sent to our webmaster for directions and a site map. **Tom Stevens** announced that **Vern Ren** has been busy caring for his ill wife and that **Dennis Chin** will be back in town in a couple of weeks. **Ed Mauer** had his ankle re-operated upon as one of the screws had broken from the previous operation. He will be in a cast for about 7 weeks. **Al Kinsman** reported that **Bill McGee** had knee replacement surgery after losing 20 -30 pounds and that he is undergoing physical rehabilitation. **John Pineau** is recovering nicely from major surgery and is up and about. It was great to see **Ron Burchett** looking quite healthy after his bout with some major surgical issues and complications. Our best wishes to these members for continued recuperation and good health.

In a lighter vein, **Mel Suelze** presented **Kevin Klocke** with a set of bright yellow Fluke suspenders, Kevin then talked about the upcoming tug boat races on May 12th on pier 66. He will be arriving at 8AM to start setting up the pond and would encourage members to help him, weather permitting. Kevin will notify the webmaster on Thursday whether it's a go or not, so be sure to check the website. He is arranging for parking, shirts, hats and lunch. (IT IS A GO)

Lee reported on the fun float at the Seattle Yacht Club on Wednesday. There were nine members displaying their boats and boating skills. In addition to the pleasure craft and tugs there were two sailboats on the water and two out of three steamboats operating to the delight of many of the yacht club members. On the downside there was a collision between the *Vosper* and the destroyer *Arleigh Burke* resulting in a large hole in the bow of the *Vosper*. All in all, the weather cooperated and all had a great time. Six of us enjoyed lunch in the bar area, Rubens of course. Many thanks to **Scott Bauman** for orchestrating this event. .

Lee gave a brief update on the progress for the Regatta.

Ron Burchett discussed this year's Foss Cup, stating that there would be a new course design to accommodate all scales of boats. The Foss Cup committee agreed to share the cost of our storage facility as there are many items related to this event stored there. Ron also discussed getting our help in the transportation of the needed items and the set up, through more timely communication. He anticipates participation from international hobbyists and hopes he can arrange for better publicity and more income from sponsors and vendors. Due to dwindling funds it was emphasized that there would be necessary cutbacks in expenses for trophies and food.

Ron brought up the Member's Only portion of the website. In the end it was decided to continue the Members Only portion of the website, thus protecting member's addresses and phone numbers from the general public. After three months, the newsletter will be moved to the public section of the site. It was noted that all upcoming events can be accessed from the website calendar. The meeting ended at 2050 hours with some discussions persisting beyond closed doors as the rest of us headed for home ports.

Steam will rise again !

The outing to the **Seattle Yacht Club** was a very pleasant experience for the NWR/ CSMs as the club does treat us very favorably . The facilities were very comfortable for the day, tables and chairs aplenty and a smile on every face. There was a good turn out of members, Scott Baumann, Mel Suelzle, Ron Bray, Al Kinsman, Mike Jones, Allan Wing, Norm Hiatt, Robert Osmond and Lee Stewart. Most brought pleasure boats of one type or another. There were also some war ships and work boats. The Steam launches were very popular since they are not seen often.









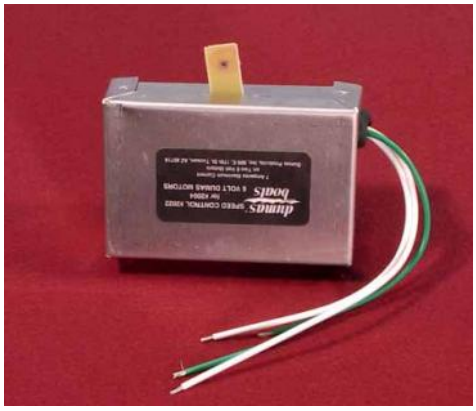



Speed Control Basics By Allan Wing

Last month I discussed the operation of a brushed DC motor. This month I will talk about the speed controls we use with the motors in our boats.

The first speed controls were a wire wound resister controlled by an arm on a servo. These controlled the speed of the motor by varying a resistor that was in line with the motor. The speed of a motor is proportional to the voltage across the motor. With a resistor in line with the motor some of the battery voltage is used by the resistor the rest by the motor. The greater the resistance of the speed control the higher the voltage is across the resistor and the less across the motor. The less the voltage across the motor the slower the motor runs.

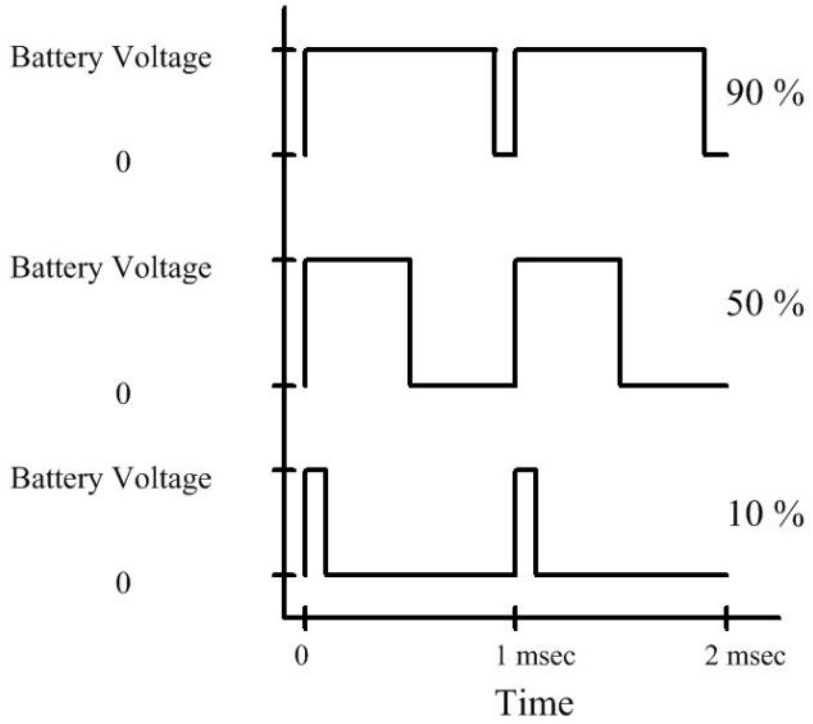
Below is a picture of a Dumas resistor speed control. The Dumas resistive speed control is still be available today. It provides proportional control with both forward and reverse. There are several limitations with a resistive speed control. First the speed control should be matched with the motor for best operation. A motor that uses higher current would need a different control that has less resistance than a motor that uses less current. Today Dumas provides two speed controls, one for 6 volt operation and one for 12 volt operation, this is because their 6 and 12 volt motors use different amounts of current. Another limitation is that at half throttle the motor uses half the energy from the battery and the speed control uses half. Thus we lose some energy just heating the speed control. Also when starting out it may not be possible to get very slow or low end, control. If the motor draws very little current the largest resistance value may not reduce the voltage to the motor which is the desired amount for low speed operation. As a result most applications of the Dumas resistive speed control use the speed control with a matched Dumas motor.



In the late 1970's and 1980's with the advancement of electronics and the development of new kinds of transistors the Electronic Speed control or ESC was developed. The ESC provided a new way of controlling the voltage to the motor. This was done by switching the voltage to the motor and controlling the amount of time the voltage was applied and the amount of time it was turned off. For half speed the voltage was applied half the time. I looked at two current ESC's to see exactly how this was done. Looking at the waterproof ProBoat and the Viper Marine 20, both ESC's are available at Galaxy Hobby.

Both ESC's use a technique called pulse width modulation. This is accomplished by providing a pulse to the motor at a set rate. The width of the pulse is changed to provide the control. If the motor is to run at half speed the pulse width is set so the voltage is provided half the time.

This is repeated multiple times per second. The number of times per second is the frequency of the ESC. Most ESC's have a frequency of between 800 and 5,000 pulses per second. The Viper Marine 20 runs at 1,000 pulses per second and is illustrated below.



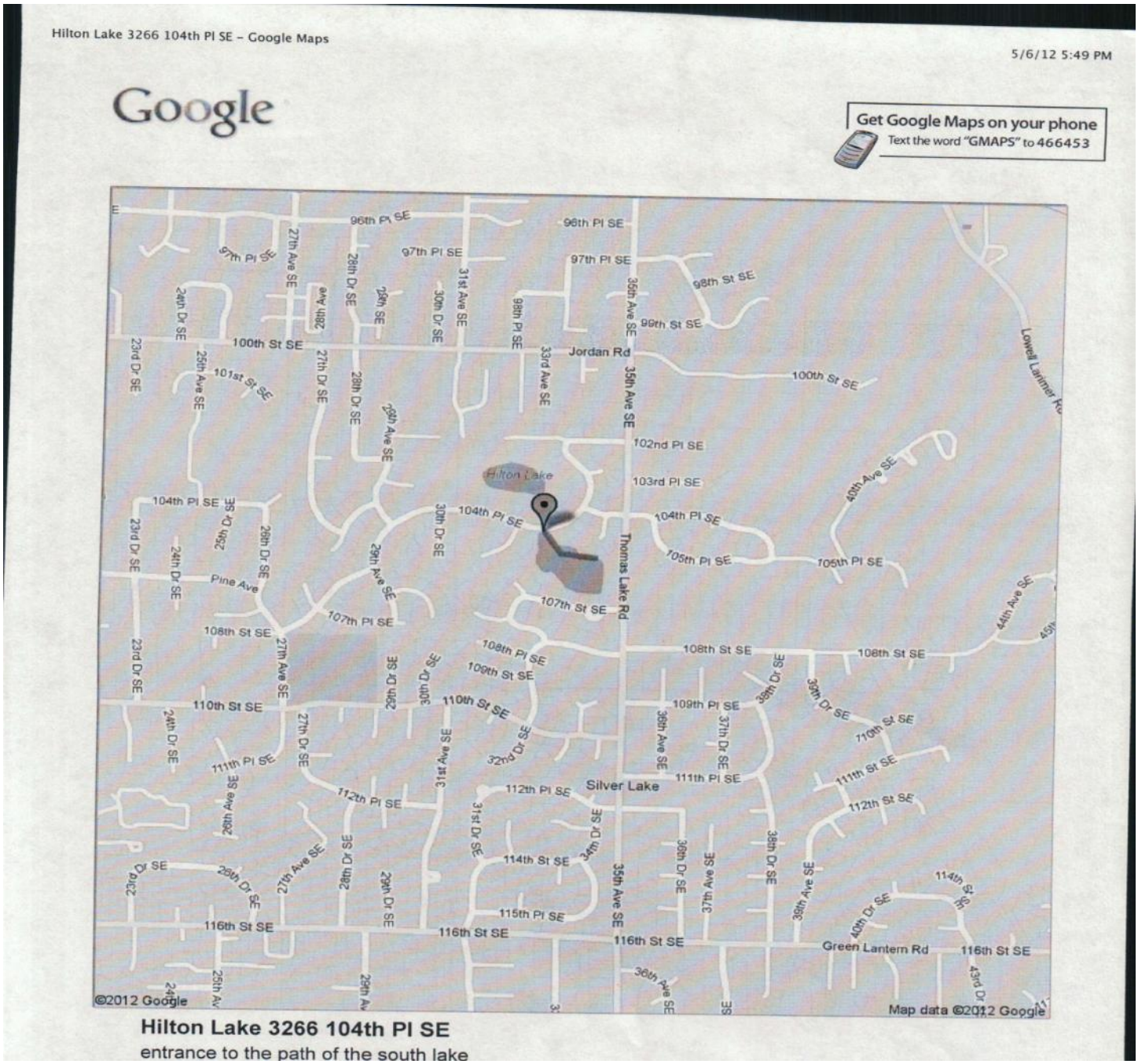
As can be seen the voltage is applied a proportion of the time equal to the requested speed. This gives the same result as providing a lower voltage to the motor. For example at 50% time using a 6 volt battery the motor is effectively getting equivalent of 3 volts and the motor will run at half speed. The same is true for other percentages. At stop the ESC does not pulse and is continually off. At full throttle the ESC does not pulse and is continually on. This has a couple of advantages over the resistive speed control. At slower speeds the heat loss in the speed control is much lower (almost zero). There is some heating in the ESC because the transistors used have a small resistance when turned on; this is only really noticeable when you use a high current motor. For example we found that some of the speed controls we were using in our polo Springers would get rather warm. The heating can be reduced by using an ESC with a higher current rating. For proper operation the speed control does not have to be matched to the motor. You now only have to make sure that the motor does not draw more current than the maximum rating of the speed control. The ESC gives more truly proportional control than the resistive speed control.

There is one exception to full proportional control when using the ProBoat. Many of our members have stated that the ProBoat does not provide good low speed control. In my testing I found that the ProBoat does not provide the same low speed control as the Viper illustrated above. When advancing the throttle on a ProBoat ESC the smallest pulse provided is 33%, thus when using a 6 volt battery the slowest speed provides an average of 2 volts to the motor. Many of our motors will run faster than we want with 2 volts to the motor (4 volts if a 12 volt battery is used). I found the same thing when in reverse with one additional difference. In reverse the ProBoat ESC will provide

pulses from 33% to only 66%. As a result with a 6 volt battery the motor will get between 2 and 4 volts. This limited range works but you should be aware of the limitations. When providing pulses the ProBoat runs at 800 pulses per second. This difference in pulse rate is not noticeable in our operations.

The electronic speed control has made it much easier to use a wide variety of motors in our boats.

The 19th of May is our outing to Hilton Lake. The map attached should help you find it. Time is from Noon to 4 PM.



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